

Vol. 91. Part 4. Pp. 105-117.

15th July, 1941

IMP. INST. ENT.
LIBRARY

17 JUL 1941

SERIAL *Eu. 344*
SEPARATE

THE
TRANSACTIONS
OF THE
ROYAL
ENTOMOLOGICAL SOCIETY
OF
LONDON

World List abbreviation: *Trans. R. ent. Soc. Lond.*

CONTENTS

	PAGE
+ TALBOT, G. Revisional notes on the genus <i>Idea</i> Fabr. (Lep. Rhop. DANAIIDAE)	105-117

LONDON:

PUBLISHED BY THE SOCIETY AND
SOLD AT ITS ROOMS, 41, QUEEN'S GATE, S.W.7

Price 4s. 0d.

THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON

Founded, 1833. Incorporated by Royal Charter, 1885.

PATRON—HIS MAJESTY THE KING.

OFFICERS and COUNCIL for the SESSION, 1941-1942.

K. G. BLAIR, D.Sc., *President*.

PROF. P. A. BUXTON, M.A.	} <i>Vice-Presidents</i> .
G. FOX-WILSON, N.D.H.	
HUGH MAIN, B.Sc.	

BRIGADIER W. H. EVANS, C.S.I., C.I.E., D.S.O., *Treasurer*.

N. D. RILEY, *Secretary*.

F. J. GRIFFIN, A.L.A., *Registrar*.

Other Members of Council.

PROF. H. G. CHAMPION, C.I.E., M.A.	O. W. RICHARDS, M.A., D.Sc.
E. A. COCKAYNE, M.A., M.D., F.R.C.P.	THE HON. MIRIAM ROTHSCHILD.
A. S. CORBET, D.Sc., Ph.D., F.I.C.	J. SMART, B.Sc., Ph.D.
COL. F. A. LABOUCHERE.	W. H. T. TAMS.
A. M. MASSEE, D.Sc.	A. WELTI.
C. POTTER, B.Sc., Ph.D.	

Finance and House Committee.

A. WELTI (Chairman).	
H. M. EDELSTEN.	FRANCIS HEMMING, C.M.G., C.B.E.
A. G. GABRIEL.	J. SMART, B.Sc., Ph.D.
C. N. HAWKINS.	

Publication Committee.

O. W. RICHARDS, M.A., D.Sc. (Chairman).	
E. A. COCKAYNE, M.A., M.D., F.R.C.P.	W. H. T. TAMS.
G. FOX-WILSON.	V. B. WIGGLESWORTH, M.A., B.Ch., M.D.,
A. M. MASSEE, D.Sc.	F.R.S.

Library Committee.

PROF. P. A. BUXTON, M.A. (Chairman).	
E. B. BRITTON.	F. LAING.
A. S. CORBET, D.Sc., Ph.D., F.I.C.	R. W. LLOYD.
B. M. HOBBY, M.A., D.Phil.	

Committee for the Protection of British Insects.

W. G. SHELDON (Chairman).	
CAPT. E. BAGWELL-PUREFOY.	COL. F. A. LABOUCHERE.
C. L. COLLENETTE.	N. D. RILEY.
W. J. DOW.	H. M. EDELSTEN (Secretary).
J. C. F. FRYER, O.B.E., M.A.	

The Executive Officers of the Society are *ex-officio* members of all Committees.

DELEGATES OF THE SOCIETY TO:

- 1. British National Committee for Biology** (Royal Society).
Sir Guy A. K. Marshall, C.M.G., D.Sc., F.R.S., appointed 1939.
Dr. Karl Jordan, F.R.S., appointed 1936.
- 2. International Congress of Entomology** (Berlin 1938).
J. C. F. Fryer, O.B.E., M.A. *Francis Hemming, C.M.G., C.B.E.*
A. D. Imms, M.A., Sc.D., F.R.S.
- 3. Local Committee of Management of Wicken Fen.**
Mr. H. M. Edelsten. *Mr. E. C. Bedwell.*
[Delegates nominated by Committee for the Protection of British Insects.]
- 4. National Trust for Places of Historic Interest or Natural Beauty.**
Mr. W. G. Sheldon, appointed 1922.
- 5. New Forest Association.**
Mr. W. Fassnidge, appointed 1934.
- 6. Royal Meteorological Society. Phenological Committee.**
Dr. C. B. Williams, appointed 1937.

REVISIONAL NOTES ON THE GENUS *IDEA* FABR. (LEP. RHOP. DANAIDAE)

By G. TALBOT.

Manuscript received 10th June, 1940.

Read 6th November, 1940.

As a result of a study of the extensive material of this genus in the British Museum, including as it does the collections of Oberthür and Fruhstorfer, some new light is thrown upon the affinities and nomenclature of certain species. One new form is described, belonging to *I. leuconoë* Erichs.

The arrangement of species and forms, adopted here and in the British Museum, follows more or less that of Hulstaert (1931).

The confusion existing as to the identity of forms of *I. stoll*i (Moore) (*logani* auct.) and *I. lynceus* (Drury) is cleared up, and the existence of two species established. Also it seems necessary to consider *jasonia* (Westw.), *malabarica* (Moore) and *agamarschana* (C. & R. Feld.) as representing distinct species replacing one another in their respective areas. These are treated in more detail in the *Fauna Brit. India Butts.* 2, now in course of preparation.

The forms grouped under *blanchardii* March., *idea* (Linn.), and *d'urvillei* Boisd. are here considered as representing distinct species, whereas Hulstaert (1931) and Bryk (1937) treat them as one. It will be observed that in each of these three groups of forms, more than one subspecies may be distinguished. The apparent difference between the subspecies in each group is much less than the difference seen between the three groups, a difference showing a distinct mutation in facies. Again, neither of the groups is found within the area of another. It would appear, therefore, that each of the three groups of forms represents a species, a species which replaces one in the area adjacent, and by long isolation has developed considerable differences from the allied form with which it had, presumably, a common origin.

One species occurs in the Celebes group, one in the Moluccas and Sula Islands, and the other in the islands of Key, Aru, Mysol and Waigau, and in northern New Guinea; within these areas subspecies have formed.

The material now in the British Museum is enumerated for each form.

I am indebted to the Trustees of the British Museum for facilities in carrying out this study.

Key to groups.

1. Fore-wing with vein 10 from near upper angle of cell . . . *lynceus* group, p. 106.
2. Fore-wing with vein 10 well removed from upper angle of cell . . . *idea* group, p. 109.

Key to species of *lynceus* group.

1. Fore-wing cell-spots and costal spot merged to form a black band . . . 2.
- Fore-wing cell-spots and costal spot separated . . . 3.
2. Fore-wing subapical spots, including spot in area 4, forming a black band, this band either free or merged in an outer wide black border . . .

agamarschana (C. & R. Feld.), p. 106.

Fore-wing subapical spot in area 4 small, not joined to the spot above it

jasonia (Westw.), p. 106.

3. Hind-wing rounded, not produced at vein 5 4.
Hind-wing not rounded, produced at vein 5 *stolli* (Moore), p. 108.
4. Wings grey-white or slightly dusky. Fore-wing post-discal spot in area 3
with its distal edge pointed or much narrower than proximal edge
malabarica (Moore), p. 106.
Wings very dusky, never grey-white. Fore-wing post-discal spot in area 3
oval, being wider at the middle *lynceus* (Drury), p. 107.

Key to species of *idea* group.

1. Hind-wing with distal spots 2.
Hind-wing with distal streaks 4.
2. Fore-wing with a costal spot placed opposite cell-spot 3.
Fore-wing without a costal spot placed opposite cell-spot
electra (Semper), p. 114.
3. Hind-wing with a marginal black border bearing a row of white spots
leuconoë Erichs., p. 110.
Hind-wing without a marginal black border
hypermnestra (Westw.), p. 109.
4. Hind-wing distal streaks distinctly narrowed distad and usually pointed,
usually not joined to marginal border *idea* (Linn.), p. 115.
Hind-wing distal streaks not distally pointed nor distinctly narrowed,
always joined to marginal border 5.
5. Hind-wing with a marginal row of white spots *d'urvillei* (Boisd.), p. 116.
Hind-wing without marginal white spots *blanchardii* March., p. 114.

lynceus group (*Hestia* Hübner).1. *Idea jasonia* (Westwood).

form *jasonia* (Westw.), 1848.

The light form, found in the hills.

form *diabolica* (Fruhstorfer), 1910.

A dark form, found in low country.

Hab.—CEYLON. A series of both forms.

2. *Idea malabarica* (Moore).

ssp. *malabarica* (Moore), 1877.

Wing-shape as in *lynceus*, but in appearance resembles *stolli* from Malaya; fore-wing post-cellular spot in area 1b elongate and not rounded as in *stolli*; post-discal spots in 2 and 3 triangular, being round in *stolli*.

Hab.—SOUTH INDIA. A series of both sexes from Mysore, Travancore, Trichinopoly, Nilgiri Hills, Coorg. Type ♀ from Malabar.

ssp. *kanarensis* (Moore), 1890.

Differs only in being grey-white without any dark suffusion.

Hab.—SOUTH INDIA: Kanara, a series of both sexes. Type ♂ from "Concan".

3. *Idea agamarschana* (C. & R. Felder).

This is the original spelling of the name.

Black markings enlarged. Fore-wing with post-cellular spot in area 1b forming a

wedge-shaped stripe ending in a point at base of wing; cell-spot enlarged to a patch that is produced more or less basad. Hind-wing usually without a post-cellular spot below vein 2.

ssp. *agamarschana* (C. & R. Feld.), 1865.

form *agamarschana* (= *margherita* Fruhst., 1903, Upper Assam).

Both wings with marginal black spots not connected. Fore-wing submarginal spot on vein 4 usually not united with subapical black band.

Hab.—A series of both sexes from Tavoy and Mergui; also Angranlong, 1 ♂; Chittagong, 1 ♂; Margherita, Assam, 1 ♂.

The Assam male is the only specimen from that locality in Coll. Oberthür, and may be the type of *margherita* Fruhst. No Assam specimens were in Coll. Fruhstorfer.

form *arrakana* (Fruhst.), 1910.

Fore-wing marginal black spots usually connected, and sometimes also those of hind-wing. Fore-wing apex black, and subapical black band broader, the subapical white band always narrower than in the nominotypical form; spots in areas 2 and 3 much larger.

Hab.—Arrakan and Upper Burma: Akyab, 1 ♂; Arrakan, ♂♀; Angranlong, Upper Burma, 2 ♀♀; Chittagong, Naf Estuary, 2 ♀♀; "Upper Burma", 1 ♂.

There were no specimens of this form in Coll. Fruhstorfer.

ssp. *hadeni* (Wood-Mason & de Nicéville), 1880.

Distinguished by the broad black borders of both wings.

Hab.—BURMA: Only at Bassein. A series of both sexes.

ssp. *cadelli* (Wood-Mason & de Nicéville), 1880.

Approaches *arrakana* in facies. Both wings with marginal black spots united. Fore-wing subapical black band very broad, and united with outer border. All spots larger than in the nominotypical subspecies, and hind-wing cell-spot especially larger.

Hab.—ANDAMAN ISLANDS, a series of both sexes.

4. *Idea lynceus* (Drury).

Upperside coloration rather dark, always blacker than the similar-looking *stolli*; ♀ somewhat paler. ♂ valve with apical or distal edge nearly straight, only gently incurved near dorsal side.

ssp. *lynceus* (Drury), 1773 (= *reinwardti* Moore, 1883).

Coloration smoky bluish-black; spots large.

Hab.—BURMA: Bankasoon, ♂♀; Malasoon, 1 ♂; Hanohpru, Mergui, 1 ♂. SIAM: Renong, 2 ♂♂, 1 ♀; MALAYA and SUMATRA, a series of both sexes.

The Burma and Siam specimens are slightly paler.

The type ♂ of *reinwardti* is labelled "Penang", the type ♀ "Sumatra".

ssp. *niasica* (Fruhstorfer), 1903.

Upperside more smoky-black than blue-black. Underside paler than in the nominotypical form. Spots somewhat smaller.

Hab.—NIAS, a series of both sexes, and the types.

ssp. *fumata* (Fruhstorfer), 1897.

Upperside more smoky-brown than black, especially in the female. Spots somewhat smaller than in *niasica*. Underside much paler than in *niasica*.

Hab.—SOUTH BORNEO (chiefly Pontianak), 7 ♂♂, 14 ♀♀.

5. *Idea stolli* (Moore) (= *logani* auct.).

The two type specimens, both females, definitely belong to the Java race of the species hitherto known as *logani* (Moore).

Coloration much paler than in *lynceus*. Hind-wing produced at vein 5, especially noticeable in the female, the wing longer and narrower than in *lynceus*. ♂ valve with distal edge strongly excavated.

The species is more widely distributed than *lynceus*, and appears to be much commoner.

ssp. *logani* (Moore), 1883 (= *donovani* Moore, 1883; *druryi* Moore, 1883; *diana* Fruhst., 1906).

Hestia lynceus lynceus Hulstaert, 1931, pl. 3, fig. 2.

Paler than the nominotypical subspecies, with wings longer and narrower. Fore-wing cell-spot smaller, and always well separated from the costal black patch. All spots somewhat smaller.

The name *donovani* applies to a small specimen.

The name *druryi* applies to small pale specimens with small spots.

The name *diana* is not tenable.

Hab.—MALAYA, 6 ♂♂, 7 ♀♀, including types. Type ♀ of *donovani*, Singapore. Sumatra, a series of both sexes, including types of *druryi*. Batu Islands, 6 ♂♂, 4 ♀♀, and holotype ♀ of *diana*.

ssp. *bintangia* (v. Eecke), 1915.

Resembles *logani* but wings on both sides smoky-brown.

Hab.—RIOUW-LINGGA IS. : 1 ♂ (*ex* Coll. Adams).

ssp. *stolli* (Moore), 1883 (= *mevaria* Fruhst., 1910).

Replaces *lynceus* in Java.

Darker than other forms of *stolli*, and spots larger. Fore-wing costal patch placed close to cell-spot, and in some females united with it. Both wings with veins usually more heavily blackened. Some specimens are paler, the name *mevaria* being based on these.

Hab.—JAVA, a series of both sexes, including types of *mevaria*.

ssp. *thalassica* (Fruhstorfer), 1910 (= *alceste* Fruhst.).

Resembles *logani* but is much paler on both sides, and without smoky colouring.

The great similarity between some forms of *stolli* and *lynceus* is shown by *thalassica* being described as a *lynceus* form and *alceste* as a *logani* form.

Hab.—NATUNA ISLANDS : ♂♀ types, and ♂ type of *alceste*.

ssp. *alcine* (Fruhstorfer), 1910.

form *alcine* (Fruhst.).

Dull smoky-grey, paler on underside. Hind-wing with marginal white spots very distinct. Spots of both wings as in *logani* and somewhat smaller.

form *favorinus* (Fruhst.), 1910.

Larger, and much darker smoky-brown, with large spots as in *lynceus*. Hind-wing with spot in area 1c, placed below the fold, strongly developed, at least on underside.

Hab.—SOUTH BORNEO and SARAWAK, both forms, a short series of both sexes with types of *alcine*.

The pale form is more common than the dark form.

ssp. *virgo* (Fruhstorfer), 1903.

form *virgo* (Fruhst.).

Coloration of upperside less smoky, more bluish-grey; spots larger, noticeably the cell-spots.

form *favorinus* (Fruhstorfer), 1910.

Colour variable, mostly bluish-grey, but many are smoky-brown, and some are browner on hind-wing than on fore-wing. Some specimens closely resemble *lynceus fumata* (Fruhst.), but are larger, with larger spots.

Hab.—NORTH BORNEO. Form *virgo*, 8 ♂♂, 4 ♀♀, with types. Form *favorinus*, a series of both sexes with types, and 3 ♂♂, 2 ♀♀, from Pulo Laut.

The form *favorinus* is the dominant one in North Borneo.

ssp. *hypata* (Fruhstorfer), 1910.

Smoky-brown as in *favorinus*, but smaller, with much smaller spots.

Hab.—SULU IS. One ♀ labelled “Sulu (Pryer)”, *ex* Coll. Godman & Salvin. No specimen in Coll. Fruhstorfer.

idea group (*Nectaria* Billberg).

6. *Idea hypermnestra* (Westwood).

Coloration white. Fore-wing with post-discal small spots on veins 2 to 4; post-discal spot in area 6 placed above the one in 5, and not proximad as in preceding species. Hind-wing with only two spots in area 7.

ssp. *luteata* (Butler), 1879.

A very light form.

Hab.—BURMA: Bankasoom, 2 ♂♂; Malasoom, 2 ♂♂. MALAYA: a series of both sexes, and holotype ♀.

ssp. *hera* (Fruhstorfer), 1903.

Wings duller white than in *luteata*; spots tend to be larger. Fore-wing post-discal spots in areas 2 and 3 elongate with distal end pointed.

Hab.—SUMATRA, a series of both sexes, and types from Deli.

ssp. *belia* (Westwood), 1848.

Resembles *luteata*. Both wings with marginal black markings larger. Hind-wing cell-spot much smaller.

Hab.—JAVA, a series of both sexes, and ♂ type.

ssp. *hypermnestra* (Westw.), 1848.

Comprises a light and a dark form as in *stolli*, and two intermediate forms.

form *belina* (Fruhst.), 1897.

A light form resembling *belia*. Fore-wing post-discal spots in areas 2 and 3 wedge-shaped as in *hera*.

♂ form *arbela* (Fruhst.), 1910.

Larger than *belina*, with larger spots, and more bluish-white colouring. Fore-wing post-discal spots usually connected between veins 2 and 4.

♀ form *vollenhoveni* (Fruhst.), 1897.

This name is based upon the figure in Vollenhoven, 1860, *Tijd. Ent.* 3: 143, t. 3, said to represent a ♂ from Java. This insect is probably a ♀; it resembles Borneo specimens much more closely than Java ones. The fore-wing post-discal spots in areas 2 and 3 are shown elongate and not round; in all Java specimens these spots are rounded, but in Borneo ones they are definitely wedge-shaped. The figure agrees with a form intermediate between the very dark *hypermnestra* and the white form connecting *arbela* with *hypermnestra*. No specimen in the British Museum is identical with the figure which shows the hind-wing post-discal spots placed nearer the cell than in any forms of the species in the British Museum collection. It is to be noted, however, that the fore-wing post-discal spot on vein 3 is shown as round, which is sometimes the case in Borneo specimens, but is not so in the many Java specimens examined.

Upperside smoky bluish-grey.

♀ form *hypermnestra* (Westw.).

A very large dark form, some specimens suffused with black.

Among the large series from North Borneo, there was no ♀ specimen resembling *arbela*, and no ♂ specimen resembling *vollenhoveni* or *hypermnestra*.

Hab.—BORNEO. Form *belina*. South Borneo, 2 ♂♂ and ♂♀ types; North Borneo, 4 ♂♂, 2 ♀♀; "Borneo", 4 ♂♂, 2 ♀♀; Pulo Laut, 4 ♂♂.

form *arbela*.—NORTH BORNEO, a series of males, and ♂ type from Kina Balu.

form *vollenhoveni*.—SOUTH BORNEO, 7; North Borneo, 5; "Borneo", 4.

form *hypermnestra*.—SARAWAK, 1; NORTH BORNEO, a series, also ♀ allotype of *arbela*.

It is of interest to note that in South Borneo *lynceus*, *stolli*, and *hypermnestra* fly together, all looking very similar in appearance. In North Borneo the two latter species occur.

7. *Idea leuconoë* Erichson.

Wings more rounded than in *hypermnestra*. Coloration white, more or less yellowish over basal area of fore-wing and sometimes of hind-wing. Both wings with outer black borders bearing submarginal white spots. Fore-wing post-discal spots usually more or less united to form a sagittate band.

ssp. *riukiensis* (Holland), 1893 (= *nipponica* Fruhst., 1898, "S. Japan"; *missilia* Fruhst., 1910, Liu-Kiu).

A very light form. A pale yellow flush over proximal areas of both wings, but indistinct on hind-wing. Submarginal white spots prominent on both wings. Fore-wing post-cellular spot in area 2 small. Hind-wing post-discal spots small.

A ♂ in Coll. Fruhstorfer is labelled "Okirawa", and bears the name *nipponica*. As this specimen agrees with the figure in Seitz, *Grossschm. Erde* 9, t. 74a, fig. 3, it may be the type. It is merely a smaller and weakly marked specimen, and agrees with others in the British Museum collection. The locality is probably meant for Okinawa. No specimens of this subspecies are known from Japan so far.

Hab.—RIU-KIU ISLANDS. A series of both sexes from Ishikagi and Okinawa. The series includes specimens of the form *clara* (Butl.).

ssp. *clara* (Butler), 1867.

Black markings heavy. Fore-wing post-discal band continuous to the costa; post-cellular spot in area 2 much larger than in *riukiensis*. Hind-wing with the post-discal spots in areas 1c to 3 usually connected by an undulate line.

form *kwashotoensis* (Sonan), 1928, Japan.

Black markings rather heavy. Hind-wing with a large black cell-spot, and post-discal spots united.

Not represented in the British Museum.

form *kanamarui* (Nomura), 1932, Formosa.

Markings heavy. Hind-wing without a cell-spot; post-discal spots united.

Not represented in the British Museum.

form *takabanis* (Nomura), 1931, Formosa.

Represents an unimportant aberration.

Hab.—FORMOSA, a series of both sexes. No specimens from Japan are in the collection.

ssp. *leuconoë* Erichson, 1834.

Resembles *clara*. Both wings more strongly tinged with yellow. Fore-wing darker at the apex; post-discal black band very broad above vein 4. Hind-wing with a prominent cell-spot.

Hab.—LUZON, a series of both sexes.

ssp. *solyma* (Fruhst.), 1910, Babuaynes.

Not represented in the British Museum.

ssp. *athesis* (Fruhst.), 1911.

Very close to the Luzon form. Fore-wing post-discal spot in area 2 very small.

Hab.—POLILLO, 1 ♂, 1 ♀. No specimens in Coll. Fruhstorfer.

ssp. *gordita* (Fruhst.), 1911.

Submarginal white spots of both wings, and basal area of fore-wing more or less dusky; apical area darkened.

Hab.—MINDORO, 2 ♂♂, Ticao, 2 ♂♂. No specimens in Coll. Fruhstorfer.

ssp. *moira* (Fruhst.), 1910.

Scarcely differs from *gordita*. Hind-wing submarginal spots and distal area without any dusky suffusion.

Hab.—BAZILAN, 7 ♂♂, 6 ♀♀, including types.

ssp. *obscura* (Staudinger), 1889.

The type of this form is the specimen figured by Semper in *Reis. Philipp.* 5, t. i, fig. 4 (♂ underside, Suriago, E. Mindanao).

The variation seen in a series of this form suggests that *gordita* and *moira* are not distinct from it. Hind-wing usually dusted with black in distal area, but there are many specimens without this suffusion. Fore-wing with black markings often enlarged, especially the post-discal band, and basal area darkened. Dark specimens are in a minority, but on the whole the form is darker than the nominotypical one, and with narrower light stripes in areas 4 to 6 of fore-wing. Hind-wing submarginal spots distinctly smaller and usually dusky. Some specimens (3 ♂♂, 4 ♀♀) are very light, with small spots and interrupted bands.

Hab.—MINDANAO, a series of both sexes.

ssp. *vicetia* (Fruhst.), 1911, Domoran.

ssp. *caesena* (Fruhst.), 1911, Bohol.

ssp. *fregela* (Fruhst.), 1911, Siargao.

The types of these forms are in the Semper Collection. No specimens in the British Museum.

The name *caesena*, founded upon the figure of a ♀ in Semper, *Reis. Philipp.* 5, t. i, fig. 5, is of doubtful standing; specimens from Mindoro are quite similar. Bryk (1937, *Lep. Cat.* 78: 30) quotes Bohol as locality for *obscura*, but this is an error.

ssp. *samara* (Fruhst.), 1910, Samar.

A single ♂ in the British Museum collection agrees with *princesa*, with the hind-wing submarginal spots somewhat larger. No specimen in Coll. Fruhstorfer.

ssp. *princesa* (Staudinger), 1889.

On the whole lighter than *obscura*; veins less heavily blackened. Fore-wing cell-patch narrower, and at least only just touches lower edge of cell, often not reaching it.

Hab.—PALAWAN, a series of both sexes; Sulu, 1 ♂.

The Sulu specimen is lighter, without any yellow tinge; fore-wing post-cellular spot in area 2 minute.

ssp. *esanga* (Fruhst.), 1898.

Dark markings prominent. Fore-wing cell-patch very large and united with post-cellular spot in area 2; patch in 1b very large. Hind-wing cell-spot much larger than in *princesa*.

Hab.—TALAUD (TALAUT) ISLANDS, 5 ♂♂, 2 ♀♀ and ♂ type.

ssp. *godmani* Oberthür, 1879.

A large light form. Fore-wing post-discal band broken; cell-spot very large. Hind-wing cell-spot small and restricted to lower part of cell; post-discal spots small, somewhat rounded, and placed nearer cell than in other forms. A very distinct subspecies.

Hab.—SANGIR ISLANDS, 6 ♂♂, 10 ♀♀.

The Oberthür collection contained 4 ♀♀ labelled "Sangir, Coll. Bruijn, 1877". One of these bears the name *godmani*, and is selected now as the holotype.

ssp. *nigriana* (Grose-Smith), 1895.

This name was based upon 2 ♀♀; these are in the Museum and also a ♂ and ♀ agreeing with them.

Both wings with a broad black outer border, the post-discal lines and submarginal white spots being reduced and dusted with black.

Compared with *princesa* this is a darker race. Fore-wing post-discal black band continued to the apical black which is of much greater extent; cell-patch much larger. Hind-wing post-discal band of black wedge-shaped spots very prominent; cell-spot larger than in *princesa*.

Whether the form *nigriana* is confined to the Taganac Islands is not certain, but a long series from Borneo constitutes a lighter form for which a name appears necessary.

***Idea leuconoë* subsp. *nigriana* form *littoralis* form. n.**

♂♀. Both wings with more prominent submarginal spots, especially on hind-wing where they are not dusky. Fore-wing post-discal white undulate band reaching vein 4, not dusky; post-cellular spot in area 2 of variable size, but tends to be larger; post-discal white markings rarely slightly dusky.

Hab.—Form *nigriana*.—TAGANAC IS., types (♀ non ♂, and ♀); “BORNEO”, 1 ♂ (*ex* Coll. Hewitson); “BORNEO (Lowe)”, 1 ♀ (*ex* Coll. Godman and Salvin).

Form *littoralis*.—BORNEO, 17 ♂♂, 16 ♀♀. Sandakan, 7 ♂♂, 5 ♀♀; “N. Borneo”, 1 ♂; Labuan, 3 ♂♂, 2 ♀♀; Kina Balu, 1 ♂, 2 ♀♀; Brunei (*Waterstradt*), 1 ♀; Mangalun Island (*Everett*), 3 ♂♂; Elopura Island, ♂♀; “Borneo”, 1 ♂, 1 ♀; Balabac, 1 ♀; Sarawak, 1 ♀.

Types from Sandakan (*ex* Coll. Honrath, *via* Coll. Fruhstorfer).

ssp. *natunensis* (Snellen), 1895–96.

Not represented in the British Museum.

ssp. *javana* (Fruhstorfer), 1896 (? = *karimondjawae* v. Eecke, 1933).

Judging from the figure of the type (1903, *Iris* 16 : 60), this is near *littoralis*. Fore-wing subapical white markings more developed; cell-spot narrower; spot in area 1b smaller; no basal yellow tinge. Hind-wing cell-spot smaller.

Not represented in the British Museum. Type said to be in Coll. Pagenstecher in Wiesbaden.

ssp. *engania* (Doherty), 1891.

Black markings strongly developed. Fore-wing without yellow tinge; cell-patch large, united with large spot in area 2; submarginal spots large. Hind-wing cell-spot larger than in *littoralis*; submarginal spots much larger.

Hab.—ENGANO, 4 ♂♂, 11 ♀♀.

ssp. *lasiaka* (v. Eecke), 1913, Simalur.

Not represented in the British Museum collection. The original description is vague. Judging from the figure (*Zool. Medded.* 4 : 79, fig. 3) the insect is very like *engania*, not *vedana*, especially in the fusion of the fore-wing cell-patch with the spot in area 2; base of wing dusted with black; anterior three submarginal

spots well marked, which is not the case in either ♀ *engania* or *vedana*. Hind-wing distal light markings more or less dusky.

ssp. *vedana* (Fruhstorfer), 1906.

Differs from *engania* especially by the fore-wing post-discal spot in area 2 being much smaller and not touching the cell.

Hab.—BATU ISLANDS, 2 ♂♂, 2 ♀♀, with ♂ type.

ssp. *chersonesia* (Fruhstorfer), 1897.

The type is the specimen figured by Distant (*Rhop. Malay.* pl. 39, fig. 3, ♀).

Resembles *vedana*. Both wings with proximal area flushed with pale yellow; black markings narrow; fore-wing cell-patch narrow; submarginal spots of both wings more developed.

Hab.—MALAYA: Singapore, ♂♀; Perak, 1 ♂. "Sumatra," 1 ♀ (worn, but apparently with stronger yellow tinge); Billiton Island, 1 ♀ (yellow tinge very faint).

ssp. *siamensis* (Godfrey), 1916.

A lighter form than *chersonesia*. Black markings narrower, and submarginal white spots prominent. Fore-wing post-cellular spot in area 2 absent or vestigial. Hind-wing cell-spot very small.

Hab.—SIAM: S.E. Siam, Hupbon, 2 ♂♂, 3 ♀♀ (♀ allotype); Bangkok, Siracha, ♂ type.

8. *Idea electra* (Semper).

ssp. *electra* (Semp.), 1878.

Fore-wing long and narrow, produced at apex. Both wings tinged with yellow, stronger in basal areas; markings somewhat as in *leuconoë* but reduced. Fore-wing post-discal sagittate band placed farther from cell; outer black border narrower. Hind-wing without a cell-spot; outer border narrower than in *leuconoë*; post-discal narrow wedge-shaped spots remote from cell and all separate.

Hab.—MINDANAO, 1 ♀; "Philippines," 1 ♀.

ssp. *harmonia* (Fruhstorfer), 1910, South-east Mindanao.

Not in Coll. Fruhstorfer, nor in the British Museum.

9. *Idea blanchardii* Marchal, 1845.

This species is united with *idea* and *d'urvillei* by Hulstaert (1931), and this action is followed by Bryk (1937). It seems advisable to regard *blanchardii* as a replacing species.

Upperside of both wings without submarginal white spots, and usually with no defined black border; distal narrow stripes reaching the brown and ill-defined borders. Hind-wing without spots in area 7 excepting a distal one on underside. Fore-wing with two post-cellular spots, the larger below vein 2. Hind-wing without a cell-spot.

ssp. *garunda* (Fruhstorfer), 1910 (= *paluana* Martin, 1914, Cent. Celebes).

Coloration white; borders blackish-brown, and on hind-wing not reaching below vein 5.

Hab.—SOUTH CELEBES (Bonthain), ♂♀; EAST CELEBES, 2 ♂♂; CENT. CELEBES, Dongala, Tawaya, Kalawara, 2 ♂♂, 3 ♀♀ (♀ paratype of *paluana*).

from Kalawara); SANGIR ISLAND (Doherty), 1 ♂. Type ♂ of *garunda* from Bonthain, ♀ from Dongala.

ssp. *kühni* (Röber), 1887.

Very close to *garunda*; marginal borders darker and broader, on hind-wing reaching tornus.

Hab.—BANGGAI ISLAND, 3 ♂♂, 5 ♀♀, with ♂ type from Coll. Fruhstorfer.

ssp. *blanchardii* Marchal, 1845 (= *tondana* Vollenhoven, 1860).

Resembles *garunda*. Dark borders more smoky-brown; discal area of fore-wing somewhat brownish, more strongly brown over basal area; post-cellular spot in area 2 smaller than in *garunda* and sometimes absent. Hind-wing border usually diffuse and broken below vein 5.

Hab.—NORTH CELEBES, a series of both sexes; Bangka Island, N. Celebes, 7 ♂♂, 1 ♀.

ssp. *marosiana* (Fruhstorfer), 1903.

Fore-wing more strongly washed with smoky-brown. Hind-wing with veins more heavily darkened.

Hab.—SOUTH CELEBES, a series of both sexes, with ♂ type from Samanga. 3 ♀♀, without precise locality, are much browner, and one has the hind-wing outer border very broad, almost reaching the cell.

ssp. *djampeana* (Fruhstorfer), 1899.

Resembles *garunda*. Fore-wing cell-patch large, produced distad at its middle towards angle of *ds* veins; apical area broadly brown; marginal border rarely complete to tornus, usually broken by the vein-bars and intraneural stripes. Hind-wing usually with an ill-defined cell-spot; distal area sometimes dusky.

Hab.—TANAH DJAMPEA, 7 ♂♂, 5 ♀♀, with ♂ type.

ssp. *phlegeton* (Fruhstorfer), 1904.

Both wings with outer black border sharply defined; hind-wing without a cell-spot; otherwise similar to *djampeana*.

Hab.—TUKAN BESI ISLANDS, 2 ♂♂, 2 ♀♀. Also ♂ type from Bironnga (*ex* Coll. Schmidt, *via* Coll. Joicey).

ssp. *munaensis* (Fruhstorfer), 1899.

Similar to *phlegeton*. Borders more bluish-black and wider. Fore-wing dusky; cell-spot larger. Hind-wing dusky at least in distal area.

Hab.—BUTON, 1 ♂; also ♀ neallotype (*ex* Coll. Fruhstorfer). The type is in Mus. Basel.

10. *Idea idea* (Linnaeus).

This species differs sharply from *blanchardii*, and has somewhat the pattern of *leuconoë*. Both wings with outer black borders and submarginal white spots sharply defined; post-discal narrow stripes. Hind-wing without cell-spot; area 7 on upperside without spots, but on underside usually with one or two.

ssp. *sula* (de Nicéville), 1900 (= *hertha* Fruhst., 1903, Sula Besi).

Differs from the nominotypical form on fore-wing in the much smaller spots and narrower stripes. Hind-wing with well-defined black border; area 7, on underside, with one distal spot.

Hab.—SULA ISLANDS, a series of both sexes, with types of *hertha*.
The name *hertha* is not tenable.

ssp. *aza* Boisduval, 1832.

Similar to *sula*. Both wings with submarginal spots larger. Fore-wing apical area not dusky. Hind-wing post-discal stripe distinctly wedge-shaped (nail-headed).

Hab.—BURU, a series of both sexes. The type was not in Coll. Oberthür.

ssp. *idea* (Linn.), 1763 (= *agelia* Godart, 1819; *novella* Fruhst., 1910, Ceram).

Larger than other races. Fore-wing with larger spots, stripes short and wedge-shaped. Hind-wing with no defined outer border, but with a submarginal interrupted line, the anterior two or three submarginal spots alone being distinct. Hind-wing underside, in area 7, with a basal dot and a distal spot.

Hab.—AMBOINA, a series of both sexes; Ceram, a series of both sexes; Saparua, 5 ♂♂, 2 ♀♀; Gisser, 1 ♂; Banda, 9 ♂♂, 4 ♀♀; Goram, 1 ♂, 3 ♀♀.

The type of *novella* Fruhst. was not labelled as such in Coll. Fruhstorfer, but a ♀ from this Ceram material is identical with the figure in Seitz, *Grossschm. Erde* 9, t. 75b, fig. 1; this specimen is now selected as type of *novella*.

11. *Idea d'urvillei* Boisduval.

Fore-wing post-cellular spots in areas 1b and 2 large, tending to form a band with the cell-patch. Post-discal stripes on both wings much shorter and touching the black border. Hind-wing upperside without spots in area 7, and on underside a distal spot only.

The lighter forms of this species resemble *idea* from Sula and Buru.

ssp. *theia* (Fruhstorfer), 1903 (= *obiana* Fruhst., 1910).

Fore-wing spots in areas 1b and 2, and cell-patch, not completely coalescent to form a continuous band; spot in 1b large and somewhat rounded.

Hab.—BATJAN, a series of both sexes with types; OBI, a series of both sexes with ♀ holotype of *obiana* (this is not the specimen figured in Seitz, 1910, *Grossschm. Erde* 9); HALMAHERA, short series of both sexes; TERNATE, 4 ♂♂, 1 ♀.

The name *obiana* is not tenable.

form *vosseleri* (Fruhstorfer), 1903.

Apparently a melanic form in which the fore-wing is strongly dusted with black as far distad as the proximal ends of the intraneural stripes.

Habitat of the unique ♀ specimen unknown. This is now in the British Museum.

ssp. *hemera* (Fruhstorfer), 1903 (= *strigata* v. Eecke, 1915, Soëk of Sowak).

Fore-wing spot in area 1b produced distad, forming a heavy black stripe reaching the margin. Intraneural stripes on both wings much thicker and longer than in *theia*.

Hab.—NORTH-EAST DUTCH NEW GUINEA: Schouten Islands, a series of both sexes from Biak, also a pupa.

No specimen was found in Coll. Fruhstorfer, and location of the type is not known.

The name *strigata* is not tenable, as is shown by the figure in *Zool. Medded.* 1: 217, fig. 3.

ssp. *keyensis* (Fruhstorfer), 1899 (= *aruna* Fruhst., 1904, Aru; *sangira* v. Eecke, 1915, "Sangir"; *batjanensis* Voll., ? in litt.).

Resembles the nominotypical subspecies. Fore-wing with distal stripe in area 1b very broad, coalescent with an equally broad patch in 2, and with the cell-patch, forming an oblique broad band. Hind-wing veins scaled thinly with black.

Differs from the nominotypical form on fore-wing in the discocellular spot being smaller and narrower, and the apex being less darkened. Hind-wing dark border narrower.

Hab.—KEY ISLANDS, 7 ♂♂, 5 ♀♀, and ♀ holotype; ARU ISLANDS, 10 ♂♂, 7 ♀♀, and ♂ type of *aruna*. Also a ♀ labelled "*batjanensis* Voll." and bearing a type label.

The figure given by v. Eecke of his *sangira*, from an old specimen in the Leyden Museum, appears identical with *keyensis*. Surely Sangir is out of the range of *d'urvillei*.

ssp. *d'urvillei* Boisduval, 1832.

Fore-wing with discocellular spot very large, and subapical short black band broad.

Hab.—MYSOL, 5 ♂♂, 5 ♀♀; GEBI ISLAND, 9 ♂♂, 5 ♀♀; WAIGEU, a series of both sexes and ♂ type.

ssp. *nike* (Fruhstorfer), 1903.

A darker race. Fore-wing discal band broader posteriorly; apical black more extended. Hind-wing black border usually wider, and submarginal spots usually smaller.

Hab.—NORTH-EAST DUTCH NEW GUINEA: Dorey, 6 ♂♂, 6 ♀♀, and types; Hattam, Arfak, 1 ♂; Manokwari, ♂♀; Andai, 2 ♂♂; Wandesi, 1 ♂; Mioswar Island, 1 ♀; Jobi Island, 3 ♂♂, 4 ♀♀; South Geelvink Bay, 3 ♂♂, 1 ♀. SOUTH-WEST DUTCH NEW GUINEA: Fak Fak, Kapaur, and Etna Bay, 1 ♂, 4 ♀♀.

ssp. *metris* (Fruhstorfer), 1903.

Darker than *nike*. Fore-wing discal band produced distad in cell, and usually joined to discocellular patch; costa black in basal part; submarginal spots usually dusky. Hind-wing post-discal stripes thicker, with usually dark scaling between them, so that, in typical examples, they are placed within a dusky band.

Hab.—SALAWATTY ISLAND, 3 ♂♂ and ♂ type. Also 1 ♂ labelled "Andai" (ex Oberthür), and 1 ♀ labelled "Sorön" (ex Oberthür).

REFERENCES.

- BRYK, F., 1937. *Lep. Cat.* 78.
 FORBES, W. T. M., 1939, "Revisional Notes on the DANAINAE." *Ent. Amer.* 19: 110-140.
 FRUHSTORFER, H., 1910, in Seitz, *Grossschmett. Erde* 9.
 HULSTAERT, R. F. G., 1931. *Gen. Ins.* 193.

